THE PLANT DISEASE REPORTER

LIBRARY
RECEIVED
★ JUL 27 1940 ★
U. S. Department of Agriculture

Issued By

Division of Mycology and Disease Survey

BUREAU OF PLANT INDUSTRY

UNITED STATES DEPARTMENT OF AGRICULTURE

Volume XXIV Number 13

July 15 1940

The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

THE PLANT DISEASE REPORTER

Issued by

THE PLANT DISEASE SURVEY

DIVISION OF MYCOLOGY AND DISEASE SURVEY

Volume XXIV Number 13

July 15, 1940

IN THIS ISSUE

The first occurrence of bacterial ring rot of potatoes in Virginia is reported by Harold T. Cook, page 252.

L. H. Person, page 252, reports some unusual occurrences of potato diseases in Louisiana, including pink rot, late blight, bacterial ring rot, and bacterial brown rot.

Curly top was more severe on tomatoes in Utah this year, according to H. L. Blood, page 253.

G. H. Godfrey reports the first commercially important occurrence of curly top on tomatoes in the Lower Rio Grande Valley, page 255. He also reports a number of other noteworthy diseases in the region, including psyllid yellows on potato.

O. C. Boyd reports on the incidence of fruit diseases, including X-disease, tobacco diseases, potato diseases (including pink rot), and diseases of other vegetables, in Massachusetts, page 256.

Some unusual disease occurrences for Georgia are reported by J. H. Miller, page 258.

Quince rust, sweet corn bacterial wilt, onion smut, potato late blight, and virus diseases are reported from New York by various workers, page 259.

The 1940 cotton seedling disease survey was conducted with the purpose of determining the western distribution and frequency of anthracnose, according to Paul R. Miller and Richard Weindling, page 260.

Check list revision, by Freeman Weiss, with a reproduction of the plant growth region map, page 264.

June weather, page 274.

FIRST REPORT OF BACTERIAL RING ROT IN VIRGINIA

Harold T. Cook

Ring rot [Phytomonas sepedonica] infected seed potatoes of the Cobbler variety were submitted to this office by a Nansemond County grower on March 7. They were from a lot of 50 bags of supposedly certified seed. Subsequent investigation indicates that about one-fourth of the bags in the car from which these potatoes came were actually not certified and had been mislabelled. It is estimated that the grower discarded about 2 percent of his seed because of ring rot.

The field in which these potatoes were planted was examined several times during the season. A number of ring-rot-infected plants were found on June 19, when the field was inspected with the assistance of Dr. R. J. Haskell, Mr. S. B. Fenne, Mr. T. J. Nugent, and Mr. H. M. Clark. The number of infected plants was not large, however, and another inspection when they were dug on June 24 indicated that less than 1 percent of the potatoes were affected with ring rot.

Ring-rot-affected plants were also found on June 19 in a potato field in Princess Anne County. This field was planted with a mixture of certified and uncertified seed and it is likely that the disease was introduced with the uncertified ones.

(Virginia Truck Experiment Station, Norfolk. June 28).

SOME NEW OR UNUSUAL OCCURRENCES OF POTATO DISEASES IN LOUISIANA

L. H. Person

Pink rot of potatoes, caused by Phytophthora erythroseptica, was observed for the first time in Lafourche Parish, Louisiana, on May 23, 1940. The affected plants were wilted and the tubers showed brownish-to-black discolored areas varying from 1/2 to 2 cm. in diameter, and occasionally a large portion of the potato area was discolored. The cut surfaces developed a pink color when exposed to the air. Stem lesions varying from 2 to 5 inches in length were found in a number of plants, located at distances from 3 to 6 inches above the soil surface. The stem lesions were dark in color and showed a somewhat water-soaked condition at the junction with the healthy stem tissue. Platings from the stem lesions yielded isolates of Phytophthora similar to those isolated from the tubers. Three counts made at random in the field showed 5 percent of the plants wilted.

This outbreak was observed when the field was very dry, no rain having fallen for 23 days; however, the earlier part of the growing season was extremely wet. The disease was found in the Katahdin variety and was observed about 2 weeks before harvest time.

Late blight (Phytophthora infestans) of potatoes, which occurs very rarely, was observed for the first time since 1928. The season of 1940 was probably the most favorable for development of the disease in the history of potato-growing in the State. The weather was extremely cool and the early part of the growing season was very wet, rains occurring at frequent intervals. Only a few outbreaks of the disease were noted, but one of these was extremely severe. This particular farm on which one carload of Katahdin and one-half carload of Triumph seed potatoes were planted had the disease in every field, and by May 23, at which time the potatoes were being harvested, 100 percent of the plants were affected. This was the most widespread local outbreak of late blight that has been observed in the State.

Bacterial ring rot [Phytomonas sepedonica] was observed for the first time in Louisiana in 1939. The disease was found in Rapides and Livingston Parishes. In 1940 the disease was found in Livingston, Rapides, Pointe Coupee, Lafourche, and Terrebonne Parishes, which constitute the commercial growing area of the State. The most severe infection was found in the Triumph variety in Lafourche Parish, in which the infection averaged from 3 to 5 percent. One field that showed a high percentage of ring rot in 1939 was planted with disease-free seed in 1940. No ring rot developed in this field, indicating that the disease is not carried over in the soil under Louisiana conditions.

Bacterial brown rot, Phytomonas solanacearum, was observed for the first time. Four potatoes sent to the Experiment Station from Beauregard Parish showed typical symptoms of brown rot in the tubers.

(Department of Plant Pathology, Louisiana Agricultural Experiment Station, University).

TOMATO CURLY TOP MORE SEVERE IN UTAH THAN IN 1939

H. L. Blood

After 2 years of comparative freedom from the disease, tomato curly top is appearing in Utah in severe form.

A larger population of the beet leafhopper (Eutettix tenellus Baker), the insect vector of the curly top virus, was observed on the important breeding host plants growing on the Southern Utah insect

breeding grounds near the Hurricane trial grounds, than had been observed in any previous season since observations began in 1931. A long range migration of the insects of that area into sections of Northern Utah occurred early in May.

The insect population of Northern Utah breeding areas on either end of the Great Salt Lake[1] is not unusually high. Migrations from those breeding areas began the last part of May and continued until the middle of June. A few local migrations are likely to occur late in June. Entomologists[2] report that approximately three-fourths of the over-wintering insects and of the early spring brood that are migrating from the breeding grounds into the cultivated areas carry the curly top virus. For that reason the number of insects carrying the virus this year is very much larger than at any time for a number of years.

The curly top disease appeared early in May in the Southern Utah area. By May 29, 1940, 60 percent of the plants in fields where tomatoes were grown with only a 5 percent loss in 1939 had been destroyed by curly top.

By June 10 the disease had made its appearance to an alarming extent in the commercial tomato fields of Northern Utah. From 7 to 15 percent of the plants in many of the fields in Utah County were reported infected. Six to 10 percent of the plants in many of the fields in the districts bordering the Great Salt Lake on the east were reported and observed to be infected. Reports from Boxelder County at the northern end of the tomato-producing area indicate an unusually heavy early infestation. Curly top had been observed on tomatoes, beans, and spinach in the Cache Valley by June 10.

The infection that appeared early resulted from inoculum carried in by the insects moving into the area with the long range migration from the heavily populated Southern Utah breeding area. Plants inoculated by the insects participating in the local migrations have not had time to develop the disease, and the extent of the damage that may result from these migrations can not yet be given.

A water shortage resulting from the low winter precipitation followed by the driest month of May in history promises to be an important contributing factor in the development of a curly top epidemic.

(Division of Fruit and Vegetable Crops and Diseases).

1/ Blood, H. L. The Utah Tomato Disease Situation in 1935. U.S. Department of Agric., Plant Disease Reporter 20: 96-102. 1936 (Mimeo.)

2/ Dorst, H. E. Report on curly top to Utah Canners Association. June 10, 1940. Unpublished.

TOMATO CURLY TOP AND OTHER NOTEWORTHY PLANT DISEASES IN THE LOWER RIO GRANDE VALLEY

G. H. Godfroy

For the first time to any commercially important extent, tomato yellows [curly top] has appeared in the Lower Rio Grande Valley of Texas. On May 13, 15 percent of the plants in one section of a 150-acre tomato field northwest of Mission were affected and completely non-productive. No detailed survey has been made, but a single affected plant was seen at Weslaco, 30-odd miles away from the first observed center of infection.

Paul T. Riherd, Entomologist of Texas Substation No. 15, collected several leaf hoppers from the vicinity of the affected plants at Mission, and in the lot there were a few specimens of Norvellina (Eutettix) tenella (determined by Dr. R. K. Fletcher of College Station). That the disease does not occur more generally is probably owing to the relatively low population of the insect vector.

Cabbage black rot [Phytomonas campestris] was found occasionally in early seed beds, but due probably to the continuously dry weather throughout the cabbage-growing season, the disease did not occur at all in the field.

In portions of large carrot and root parsley fields near Mission, root-rot (Phymatotrichum omnivorum) was noted on May 13 to be present and completely destructive in irregular spots making up about 50 percent of the area involved.

In potatoes, late blight (Phytophthora infestans) was again absent, and early blight (Alternaria solani) developed so late as to be not much of a factor in spring potato production. Psyllid yellows, for the second consecutive year, was a serious factor. Many large fields were completely yellowed by harvest time, and yields were greatly curtailed below the expected.

Dutch bulbous iris [I. xiphium hybridum] was heavily infected with Sclerotium rolfsii in an experimental planting of several hundred, with 5 percent complete decay of bulbs in the soil, and 15 percent showing hyphae and sclerotia on the scales and in the neck region. Progress of the disease in the partially affected plants was checked by keeping the fields on the dry side, just before ripening, and by drying the bulbs thoroughly after harvest. When partially affected bulbs were kept moist, the fungus continued to advance until all living host tissue was destroyed. An experimental planting of onions on the Station grounds likewise became badly damaged by Sclerotium rolfsii. Other crops

affected by this disease were carrots (about 5 percent); potatoes, trace; tomatoes, 1 percent; beans, irregular but definitely present; beets, 1 percent; cantaloupes, 2 percent.

Cantaloupes, in small scattered experimental plantings over the Valley, including a small planting on the Experiment Station farm, have thus far escaped downy mildew (Peronoplasmopara [Pseudoperonospora] cubensis), which has heretofore been the chief limiting factor in production of the crop in this section. One 10-acre field in the dryer end of the Valley, near Mission, made an excellent stand and a good yield of melons of high quality. A light infection of powdery mildew (Erysiphe cichoracearum) occurred on the Station planting late in the season.

(Texas Agricultural Experiment Station, Substation No. 15, Weslaco).

PLANT DISEASE NOTES FROM MASSACHUSETTS

O. C. Boyd

There were three disease infection periods during June, viz., on June 1, June 9 to 11, and June 24 to 26. On June 3 to 4, apple scab [Venturia inaequalis] began to show up from the prolonged infection period of May 21 to 29 and May 31 to June 1. It continued to appear over the period lasting through June 10 to 12, the heaviest infection appearing around June 9 to 13, no doubt resulting from infections that occurred on May 31 to June 1. Another "crop" of scab spots appeared around June 19 to 23, resulting from infections during the rain of June 9 to 11. The scab spots resulting from the June 24 to 26 rainy period appeared around July 3 to 6. Apple scab is considerably more prevalent than in the average season, resulting largely from failure to keep trees protected through the unusually damp blossom period. Many growers used lime-sulfur during the month to burn-out scab spots on apple foliage. Apple black rot [Physalospora obtusa] infection of the foliage, frog-eye, is unusually noticeable on the foliage of unsprayed trees or trees that were not protected during the pre-blossom and the blossom periods, particularly the Baldwin variety.

Cedar rust [Gymnosporangium] started to show up on apple foliage during June 10 to 13. Noticeable lesions of quince rust [G. clavipes] were observed on fruits of Delicious on June 17.

Peach scab [Cladosporium carpophilum] developed freely on leaves in orchards where heavy twig infection occurred last year and where protection was not adequate this year. Symptoms of the "X" disease [virus] began to appear about June 15 to 25 in choke cherries in the form of stunted, bushy growth of the new shoots, together with mottling

and chlorosis of the leaves. The typical yellow and red colors of the foliage, however, are not yet apparent, nor are symptoms very pronounced yet in infected peach trees.

The principal injury that developed on the fruiting canes of raspberries this month was the drying out and dying of the basal part of the canes and of the crowns resulting apparently from winter injury. Such injury was more prevalent on plants heavily infected by spur blight [? Didymella applanata].

Fruiting plants of strawberry showed considerable injury from black-root or root-rot troubles in various localities, but fruit rot from Botrytis was decidedly less common than might be expected, considering the wet weather that prevailed during the ripening period. Rhizoctonia fruit rot was more conspicuous than usual.

Tobacco downy mildew [Peronospora tabacina] survived in a good many beds throughout June, but it failed to assume destructive form, except in a few cases, even in the absence of bed treatment with paradichlorbenzene or benzol. It did not become as widespread and destructive as one might expect, considering the cool, damp periods that prevailed and the limited amount of bed treatment. It was considerably more active in Hampden County than in Hampshire and Franklin Counties. A few cases of angular leaf-spot [Phytomonas angulata] were observed in beds during the period of field setting. Bed-rots were not so injurious during the latter half of the month as they were during late May and early June. Owing to the backward season, field setting was not finished this year until about July 3, and considerable portion of the total acreage was set during the week of June 24 to 29.

Potato diseases: Rhizoctonia stem rot and virus diseases are particularly noticeable in the western half of the State this year. Counts of 15 to 20 percent of leaf roll and mosaic are not uncommon in fields from certified seed, although the average would be around 6 to 8 percent. Some lots of "selected" seed produced crops showing 50 to 60 percent leaf roll. In the three Connecticut River Valley counties, the stand of plants is poor in some fields due to wet soil and seed-piece decay. In the hill towns and in the lower, heavier soils of the valley, planting was still under way until around June 20.

Black leg [Erwinia phytophthora] of potatoes appears to be unusually scarce this year, or at least late in developing. Phytophthora pink rot, however, was observed on June 27 in a field in Hampshire County, where the disease was so noticeable shortly before harvest last fall. It took the form of a firm, wet decay of the seed-piece and a lower-stem and root rot, resulting in first a stunting with dark-green color of the plant, followed by wilting and death of the top. It was most abundant in the areas of the fields where the same disease was severe last year. Late blight [Phytophthora infestans] was first

observed July 5 as a single primary infection hill, surrounded by light, secondary infections, in a field in western Hampshire County.

Vegetable diseases that were most noticeable during June were bean bacterial blights, mostly halo blight; bean anthracnose; celery early blight and late blight; club-root of crucifers. Bacterial wilt of cucurbits was not observed until July 3. The striped cucumber beetle has been comparatively inactive so far this year because of low temperatures and damp weather. [Phytomonas phaseoli and P. medicaginis phaseolicola; Colletotrichum lindemuthianum; Cercospora apii and Septoria spp.; Plasmodiophora brassicae; Erwinia tracheiphila].

(Massachusetts State College, July 5).

PLANT DISEASE NOTES FOR GEORGIA

J. H. Miller

Southern Bacterial Wilt: Bacterium solanacearum [Phytomonas solanacearum] was found on a Clarke County truck farm producing wilt on tomatoes. The varieties were Marglobe and Break-o-day. This was in a heavy Cecil clay loam soil and the organism apparently lived over the winter, which is unusual for North Georgia. Last year this disease occurred in the same field and was then brought in on tomato plants.

Black Rot of Cabbage: Bacterium campestre [Phytomonas campestris] was also observed July 3 on the same farm. About 10 percent of the mature cabbage had broken down. This disease had not been seen on this field before and must have come in in the cabbage seed. Black rot is rather a rare disease in Georgia and this is the first time that I have noticed it in the northeastern section.

Southern Blight: Sclerotium rolfsii was obtained on the Agronomy plats, Clarke County, destroying almost 100 percent of a field of lupine. This plant seems to be much more susceptible to this organism than any other legume.

Canker on Shade Trees Caused by Endothia gyrosa: Many of the shade trees on the University campus, consisting chiefly of water oaks [Quercus nigra], willow oaks [Q. phellos] and elms [Ulmus] show large cankers around cuts and on the under side of living limbs and on exposed roots. The organism seems to grow very slowly but appears capable of invading live tissues. There is a peculiar situation in many cuts of large limbs that have been properly made and painted. This fungus, after a few years, has grown through the paint and there are many cases where the orange colored stromata show through the paint.

(University of Georgia).

SOME DISEASES REPORTED FROM NEW YORK

(From Weekly News Letter, July 1).

Quince rust (Gymnosporangium clavipes) on apple and quince: In Ulster County, according to C. G. Small, "Quince rust infection is extremely heavy in some apple orchards, especially on Cortland and McIntosh, and is present in nearly all orchards to some extent. Some orchards may lose 25 percent of the fruit. Apple rust [G. juniperi-virginianae] infection appears light."

R. W. Tousey reports from Columbia County, "Quince rust continues to show up occasionally on McIntosh, and more often on Cortland and Delicious. Many of the affected McIntosh fruits have dropped or are about to drop. Quince rust lesions on quinces are continuing to seriously deform the fruit. Twig lesions are swelling, and rust cups are present on the leaf lesions."

Bacterial wilt (Phytomonas stewartii) of sweet corn on Long Island: "Stewart's wilt disease of corn appeared in some early corn plantings in Nassau County but is very scarce in corn planted after May 15." (Orson S. Cannon).

Onion smut (Urocystis cepulae): Lloyd E. Curtis reported from Wayne County, "Onion smut is very prevalent. In some fields as high as 50 percent of the plants are infected. Certain fields show severe infection in spite of the application of adequate amounts of formaldehyde." In Oswego County, according to Philip A. MacEachron, "A considerable amount of smut has been noticed, particularly in fields where onions have been grown year after year and formaldehyde was not used."

Potato late blight (Phytophthora infestans) on Long Island: "A survey of several fields in Suffolk County following the infection periods of June 10, 11, and 12, showed that apparently not much late blight had developed. This past week several heavy rains have occurred and the nights of June 23, 24, and 25 were suitable for late blight infection." (K. V. Pike and J. B. Skaptason).

Potato virus diseases: In Genessee County, according to Ralph Morgan, "Leaf roll and mosaic are prevalent in many fields; 15 to 30 percent is not uncommon and one large planting showed at least 75 percent." Philip A. MacEachron reported heavy leaf roll infection in several fields of Chippewa in Oswego County.

A SURVEY OF COTTON SEEDLING DISEASES IN 1940 AND THE FUNGI ASSOCIATED WITH THEM

Paul R. Miller and Richard Weindling

Introduction

This, the third cooperative cotton seedling disease survey, was conducted in a manner similar to those of the past two years. In 1938 and 1939 Glomerella gossypii was found to be the most prevalent organism causing damping-off of cotton seedlings in all States east of Texas and Oklahoma. Furthermore, during the 1938 and 1939 boll rot surveys this fungus was rather frequently found on diseased bolls, with the exception of those from the two western States mentioned. Therefore, the chief purpose of the 1940 survey was to determine the fungi associated with seedling diseases of cotton in Oklahoma and eastern Texas, and the other States of the cotton belt were covered less extensively than was the case in 1938 and 1939. The principal interest centered on the question of the distribution and frequency of G. gossypii in the western portion of the area surveyed.

Methods of collection, treatment, and culturing seedlings were the same as in 1939. The samples from Texas and Oklahoma were sent to Clemson, South Carolina, by airmail. They arrived within two days in good condition, whereas test specimens sent by ordinary mail from these regions often suffered from excessive drying.

Results and Discussion

The data summarized in Tables 1, 2, and 3, and Figure 1 show that Glomerella gossypii was again the predominant organism on diseased seedlings of the eastern region. In Texas and Oklahoma, however, the fungus was found only on 4.2 percent of the seedlings as against 40.6 percent in the eastern area. This indicates that G. gossypii is of minor importance as a damping-off pathogen in these two States in spite of a fairly wide distribution (29.7 percent of the fields as against 89.0 percent in the other States). It is interesting to note in Figure 1 that G. gossypii, although again widely distributed in the southeastern States, was limited on seedlings in Texas and Oklahoma to the eastern portions of these States. This anthracnose distribution coincides with its determined distribution on cotton bolls last year.

An important reservation should be made with respect to the danger of generalizing from the results of the 1940 survey. Exceptionally late freezing weather and cold spells prevailed this spring over most of the cotton belt. Cotton had to be replanted in many sections. Many seedlings

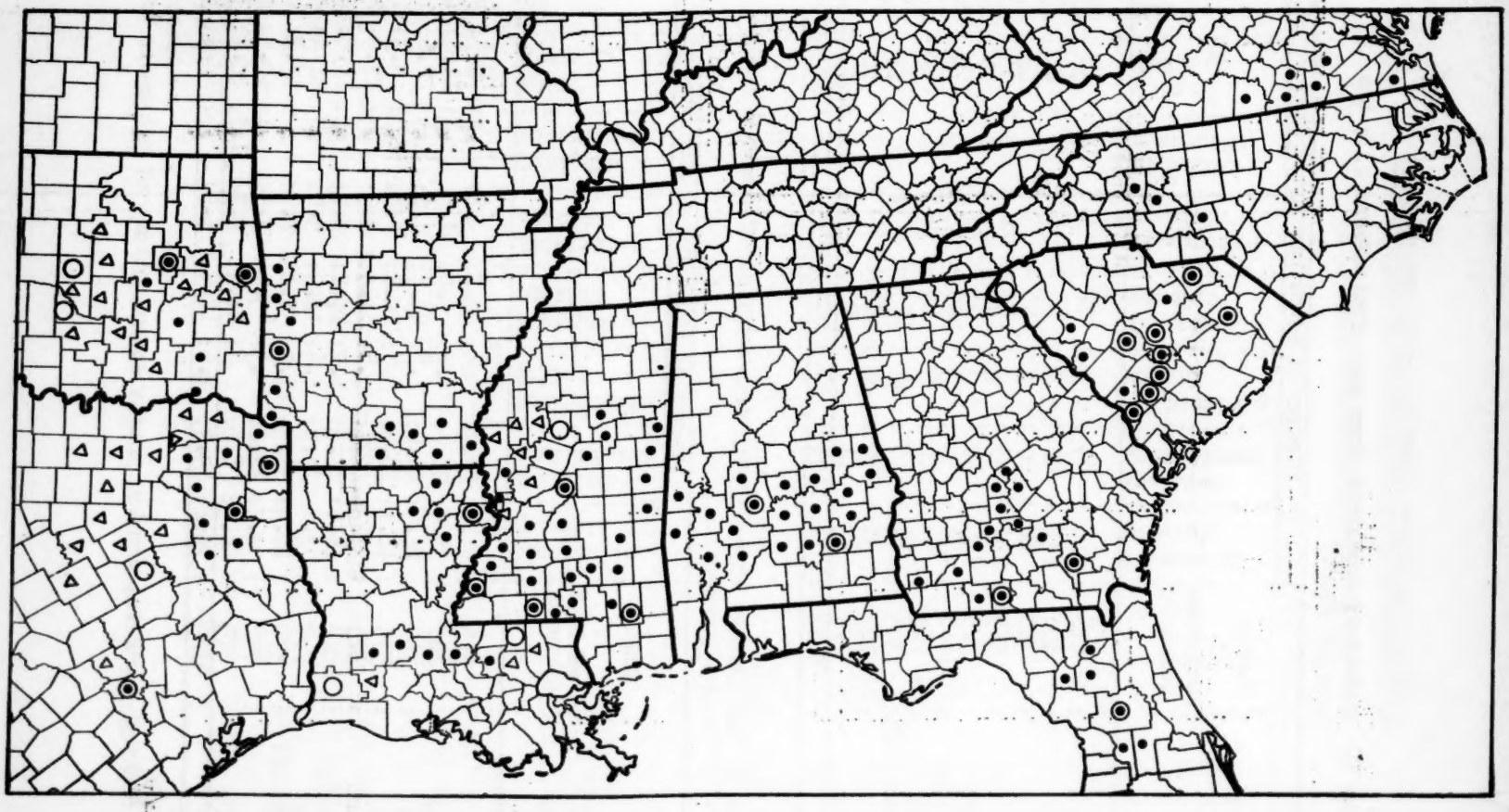

Figure 1. Counties included in the 1940 cotton seedling disease survey. Occurrence of *Glomerella gossypii* and *Rhizoctonia solani* in cultures made from seedling samples is indicated by: dot, *Glomerella* isolated; circle, *Rhizoctonia* isolated; triangle, neither fungus obtained.

Table 1. Number of seedlings from each State found with the various fungi.

State	Number of seedlings cultured	Number of seedlings found with							
		Glomerella gossypii	Fusarium moniliforme	Rhizoctonia solani	Fusarium species	Alternaria species	Diplodia gossypina	Other fungi a/	No fungi
Alabama	518	316	95	3	22	1	2	43	77
Arkansas	400	142	80	2	23	9	1	46	128
Florida	367	88	50	3	93	16	6	83	68
Georgia	335	161	63	3	34	26	9	31	51
Louisiana	375	125	10	3	56	11	2	86	108
Mississippi	1048	488	138	13	149	29	5	170	207
Oklahoma	799	33	237	5	87	46	3	115	320
South Carolina	375	84	58	43	123	13		57	44
Texas	797	34	258	7	41	26	1	82	391
Virginia	175	53	14		20	4	3	35	54
Total	5189	1524	1003	82	648	181	32	748	1448

Table 2. Percentage of seedlings from each State found with the various fungi.

State	Number of seedlings cultured	Number of seedlings found with							
		Glomerella gossypii	Fusarium moniliforme	Rhizoctonia solani	Fusarium species	Alternaria species	Diplodia gossypina	Other fungi a/	No fungi
Alabama	518	61.0	18.3	.6	4.2	.2	.4	8.3	14.9
Arkansas	400	35.5	20.0	.5	5.8	2.3	.3	11.5	32.0
Florida	367	24.9	13.6	.8	25.3	4.4	1.6	22.6	18.5
Georgia	335	48.1	18.8	.9	10.1	7.8	2.7	9.3	15.2
Louisiana	375	33.3	2.7	.8	14.9	2.9	.5	22.9	28.8
Mississippi	1048	46.6	13.2	1.2	14.2	2.8	.5	16.2	19.8
Oklahoma	799	4.1	29.7	.6	10.9	5.8	.4	14.4	40.0
South Carolina	375	22.4	15.5	11.5	32.8	3.5		15.2	11.7
Texas	797	4.3	32.4	.9	5.1	3.3	.1	10.3	49.1
Virginia	175	30.3	8.0		11.4	2.3	1.7	20.0	30.9
Total	5189	29.4	19.3	1.6	12.5	3.5	.6	14.4	27.9

a/ Fungi occurring rarely; mostly common molds and non-spore formers.

Table 3. Number of samples from each State found with the various fungi.

State	Number of samples a/	Number of samples found with						
		Glomerella gossypii	Fusarium moniliforme	Rhizoctonia solani	Fusarium species	Alternaria species	Diplodia gossypina	Other fungi b/
Alabama	21	21	20	2	14	1	2	11
Arkansas	16	16	14	1	12	6	1	10
Florida	15	14	11	2	15	8	4	15
Georgia	14	14	10	3	10	6	3	8
Louisiana	15	10	5	3	12	4	2	15
Mississippi	42	36	34	8	33	16	4	34
Oklahoma	32	7	31	5	22	21	2	27
South Carolina	15	12	13	10	13	6		12
Texas	32	12	26	6	17	15	1	28
Virginia	7	6	4		4	3	1	6
Total	209	148	168	40	152	86	20	166
percentage of samples found with fungi -		70.8	80.4	19.1	72.7	41.1	9.6	79.4

a/ A sample consisted of 25 or more seedlings collected from a single field.

b/ Fungi occurring rarely; mostly common molds and non-spore formers.

collected had apparently been injured by cold. It is quite likely that this is the reason for the unusually large number of cases in which organisms could not be isolated. Furthermore, it is probable that the percentage of seedlings infected by G. gossypii and killed before emergence was higher than in other years. All this may explain why, on individual seedlings, G. gossypii was not found as frequently as in 1938 and 1939.

The same may hold true for Rhizoctonia solani, which was isolated from fewer seedlings in 1940 than in the two previous years, with the exception of South Carolina. It should be noted, however, that only a small number of samples was collected in this State. Furthermore, a sample from a fertilizer plot on the Clemson College farm gave 100 percent Rhizoctonia solani. These 25 isolations tend to distort the general picture as they represent 30 percent of the total number of times in which R. solani was found in the survey.

(Division of Mycology and Disease Survey and Division of Cotton and Other Fiber Crops and Diseases).

CHECK LIST REVISION

Freeman Weiss

Map of Plant Growth Regions of the United States: With this section of the revised check list of diseases of economic plants of the United States a map of plant growth regions is included (Figure 1). Its purpose in connection with the check list was explained in the foreword to the first section (PDR 24: 141. 1940). The distribution of native plants is indicated in the check list by the numbers of the corresponding growth regions. The distribution of pathogenic organisms can then be designated as general if their occurrence is coextensive with that of the host, and as widespread if they occur in several but not necessarily all parts of the host range. Organisms of plurivorous habits and wide geographic distribution are designated as cosmopolitan. If the available records show a distribution limited to less than 5 States, the reporting States are listed by name, but comparison with the growth regions shown in the map may sometimes afford a truer concept of the actual range.

Although the primary purpose of the map is to show the distribution of native plants, it can also serve to indicate the range of cultivated plants--at least the perennial kinds--wherever there are definite climatic or soil restrictions.

The growth region concept was originally devised by F. L. Mulford to designate the regions throughout each of which plant growth conditions are similar enough so that the same cultivated plant species thrive. The preparation of the map and the relations of the plant growth regions to the climatic regions of the United States as delineated by Thornthwaite, and the soil regions by Marbut, are explained in the manual of Native Woody Plants of the United States by W. R. Van Dersal (U. S. Dept. Agr. Misc. Publ. 303. 1938). The growth region map was used also in Farmers' Bull. 1826 (Care of ornamental trees and shrubs).

Use of Corticium solani: American phytopathologists have generally employed the name Corticium vagum Berk. & Curt. (or formerly C. vagum B. & C. var. solani Burt) for the basidial stage of Rhizoctonia solani Kühn. In France, the name Hypochnus solani, applied by Prillieux & Delacroix in 1891, was accepted until Bourdot & Galzin made the combination Corticium solani in 1911. This species was retained as distinct from C. vagum in their Hymenomycetes de France in 1927. It is also the name preferred by British mycologists (List of Common Names of British Plant Diseases, Cambridge 1934), and indexing of subjects pertaining to Rhizoctonia solani in the Review of Applied Mycology is all done under Corticium solani. For formal citation they employ the name Corticium solani Bourd. & Galz., but this credits the authorship of the species to Bourdot and Galzin, whereas these authors only made a new combination of the one described by Prillieux and Delacroix. Under International Rules, the complete citation for this species is Corticium solani (Prill. & Delacr.) Bourd. & Galz., regrettably long though it is.

PLANT GROWTH REGIONS OF THE UNITED STATES

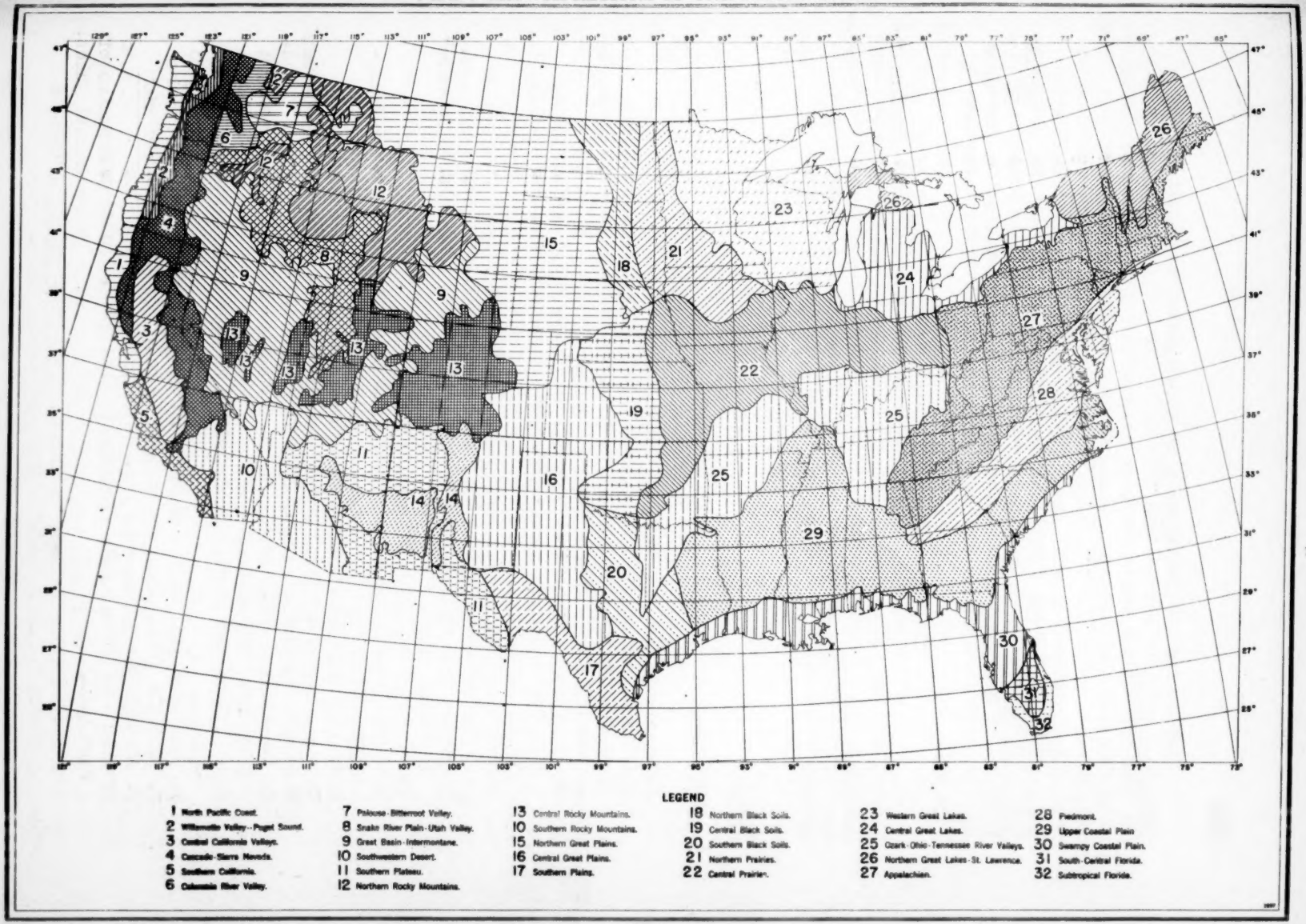

Figure 1

Aside from the recognition of this species as distinct from Corticium vagum by Bourdot and Galzin, and by British mycologists, there is some disposition among American phytopathologists to regard the generally parasitic Rhizoctonia solani, whether occurring on potatoes or other agricultural crops, as a different organism from C. vagum, which occurs commonly on humus-rich soil or on wood in contact with soil. This is aside from the "strain variations" characteristic of isolates of Rhizoctonia solani from different hosts and sources. There is evidence that isolates of R. solani are unisexual, since single basidiospore cultures from the perfect stage so far as tested (A. J. Ulstrupp, Phytopath. 29: 373. 1939) were sterile.

In conformance with this view as to the identity of R. solani, and with current practice abroad, the Plant Disease Survey proposes to adopt Corticium solani as the correct name for its perfect stage, although in most pathological connections the name of the sterile stage serves adequately to identify it and no more formal name need be used.

ALNUS

ALNUS spp.

Aleurodiscus zolleri Burt, on twigs. Oreg.
Armillaria mellea (Vahl) Fr., mushroom root rot. Cosmopolitan.
Cenangium furfuraceum (Roth.) De Not., on twigs. Me., Mich., N. Y.
C. tuberculiforme Ell. & Ev., on twigs.
Cryptospora suffusa (Fr.) Tul. (C. faginalis (Pk.) Sacc.; usually with Cryptosporium neesii Cda.) on twigs and branches. Calif., Colo., N. Y.
Cucurbitaria conglobata (Fr.) Cos. & DeNot. Alaska.
Daedalea unicolor (Bull.) Fr., butt rot, heart rot. Va.
Diaporthe eres Nit. (D. alnea Fckl., Phomopsis alnea (Sacc.) Hochn.), on twigs. Md.
(D. marginalis Pk.): Melanconis marginalis.
Diatrypella oregonensis Gooding, trunk and branch canker. Idaho, Oreg., Wash.
Didymosphaeria nana Rostr., on leaves. Alaska.
Erysiphe aggregata (Pk.) Farl., powdery mildew. Mich., N.H., W.Va.
Eutypella alnifraga (Wahl.) Fr., on branches. Colo.
E. cerviculata (Fr.) Sacc., and E. glandulosa (Cke.) Ell. & Ev., on branches. Widespread.
Fomes applanatus (Pers.) Gill., white mottled rot, butt rot. Cosmopolitan.
F. igniarius (L.) Gill., white heart rot. Cosmopolitan.
F. pinicola (Sw.) Cke., brown crumbly rot. Northwestern States.
F. scutellatus Schw., wood rot. Widespread.
Frankia alni (Wor.) Atk. (Frankiella alni (Wor.) Maire & Tison): See root gall.

ALNUS spp. — Continued.

Gnomonia alni Plowr., leaf spot. Calif., Oreg.
Gnomoniella tubiformis (Tode) Sacc. (Gloeosporium cylindrospermum (Bon.) Sacc., Leptothyrium alneum (Lév.) Sacc.), leaf spot. General.
Hymenochaete agglutinans Ell., trunk canker. Mich., N.Y., Pa.
Lenzites saepiaria (Wulf.) Fr., sapwood rot. Cosmopolitan.
Libertella betulina Desm., on branches. Wyo.
Melanconis marginalis (Pk.) Wehm., on twigs and branches. Widespread.
Melanconium alni Ell. & Ev., on bark. Calif.
M. bicolor Nees ex Fr., on branches. N.Y.
Microsphaera alni (DC.) Wint., powdery mildew. Widespread.
Nectria coccinea (Pers.) Fr., die-back, canker. N.Y., Pa.
Pezicula alni Rehm, on twigs. Mich., Minn., S.C.
Pezizella teucrii (Fckl.) Rehm, on twigs. Mich.
Phoma amenti (Cke. & Harkn.) Sacc., on catkins. Calif.
Phyllactinea corylea (Pers.) Karst., powdery mildew. General.
Phyllosticta alnea Oud., leaf spot. Alaska.
Phymatotrichum omnivorum (Shear) Dug., root rot. Tex.
Physalospora fusca Stevens, on twigs. N.C.
P. obtusa (Schw.) Cke., die-back, twig canker. S.C., Va.
Polyporus adustus (Willd.) Fr., sapwood rot. Cosmopolitan.
P. hirsutus (Wulf.) Fr., sapwood rot. Cosmopolitan.
P. radiatus (Sow.) Fr., on dead branches. Widespread.
P. sulphureus (Bull.) Fr., heart rot. Occasional.
P. versicolor (L.) Fr., sapwood rot. Cosmopolitan.
Schizophyllum commune Fr., sapwood rot. Occasional.
Septogloeum variegatum Ell. Calif.
Septoria alnifolia Ell. & Ev., leaf spot. Calif.
Solenia anomala (Pers.) Fckl., on twigs, ? die-back. Widespread.
Sphaeropsis alni Cke. & Ell., on branches. N.J.
Stereum fuscum (Schrad. ex Fr.) Quél., wood rot. Widespread.
S. hirsutum Fr. and S. purpureum (Pers.) Fr., wood rot. Cosmopolitan.
Taphrina amentorum (Sadc.) Rostr. (T. alni-incanae (Kühn) Magnus), hypertrophy of catkins. Alaska, North Pacific States.
T. occidentalis Ray, hypertrophy of fertile catkins. Western States.
T. robinsoniana Giss., hypertrophy of fertile catkins. Widespread.
T. rugosa Ray, hypertrophy of young catkins. Ga.
Eriocum. Caused by mites. Alaska.
Root gall. The woody galls found on roots of alders, which were formerly ascribed to a parasitic slime-mold and to Actinomyces sp., are caused by bacteria (Rhizobium sp.), similarly to the root nodules of leguminous plants.

ALNUS CRISPA (Ait.) Pursh, **GREEN ALDER.** Growth Regions 26, 27; including var. mollis (Fern.) Rehd., occurring in Regions 23, 24.

Cylindrosporium vermiforme J. J. Davis. Wis.
Gnomoniella tubiformis (Tode) Sacc., leaf spot. N.C.
Mycosphaerella alnicola (Pk.) House, on fallen leaves. N.Y.
Phyllachora sp., on leaves. N.H.
Septoria alnifolia Ell. & Ev., leaf spot. Wis.
Taphrina media Palm., witches'-broom. N.H.

ALNUS INCANA (L.) Moench, **SPECKLED ALDER.** Growth Regions 21, 22, 23, 24, 26, 27.

Cylindrosporium vermiforme J. J. Davis, leaf spot. Wis.
Erysiphe aggregata (Pk.) Farl., powdery mildew. New Engl. to Minn.
Gnomoniella tubiformis (Tode) Sacc., leaf spot. Widespread.
Microsphaera alni (DC.) Wint., powdery mildew. General.
Mycosphaerella perparva (Sacc.) House, on leaves. N.Y.
Phyllactinia corylea (Pers.) Karst., powdery mildew. General.
Sclerotinia (? Ciboria) sp., on aments. N.Y.
Septobasidium peckii Couch, felt-fungus canker. N.Y.
Septoria alni Sacc., leaf spot. Wis.
S. alnifolia Ell. & Ev., leaf spot. N.Y., Wis.
Taphrina robinsoniana Gies., catkin hypertrophy. Widespread.
Tubercularia confluens (Pers.) Fr., on branches. N.Y.

ALNUS JAPONICA

Heterodera marioni (Cornu) Goodey, root knot. Md.

ALNUS OBLONGIFOLIA Torr., **MEXICAN ALDER.** Growth Regions 11, 14.

Phoradendron flavescens Nutt., var. macrophyllum Engelm., mistletoe. Ariz., N. Mex.

ALNUS RHOMBIFOLIA Nutt., **WHITE ALDER.** Growth Regions 1,3,4,5,6,7,8, 10,12.

Gnomonia alni Plowr., leaf spot. Calif.
Hypospila californica Dearn. & Barth., leaf spot. Calif.
Melampsoridium alni (Thüm.) Diet., rust. Calif. Uredia and telia on Alnus; aecia on Larix.
Phoradendron villosum Nutt., mistletoe. Calif.
Taphrina occidentalis Ray, catkin hypertrophy. Oreg.
T. robinsoniana Gies., catkin hypertrophy. Calif.

ALNUS RUBRA Bong., RED ALDER. Growth Regions 1,2,5,6.

Cercosporella alni Dearn. & Barth., leaf spot. Oreg., Wash.
Ciboria amentacea (Balb.) Fckl., on catkins. Oreg.
Cylindrosporium alni Dearn. Alaska.
Cytospora sp. Wash.
Didymosphaeria oregonensis Goodding, canker. Idaho, Oreg., Wash.
Diplodia mutila (Fr.) Mont., on twigs. Northwestern U. S.
Erysiphe aggregata (Pk.) Farl., powdery mildew. Calif., Wash.
Flammula alnicola Fr., butt rot. Oreg.
Gnomonia alni Plowr., leaf spot. Calif., Oreg.
G. perversa Rehm., leaf spot. Oreg., Wash.
Gnomoniella tubiformis (Tode) Sacc., leaf spot. Oreg.
Hypospila californica Dearn. & Barth., leaf spot. Calif.
Melampsoridium alni (Thüm.) Diet., rust. Calif.
Melanconis thelebola (Fr.) Sacc., on twigs. Calif., Wash.
Melanconium candidum (Pk.) Zeller, on bark -- ? canker. Oreg., Wash.
Microsphaera alni (DC.) Wint., powdery mildew. Oreg., Wash.
Nectria spp. (N. pithoides, N. sanguinea, etc.), on bark. Calif., Wash.
N. ditissima Tul., var. major Wr., trunk canker. Oreg.
Phialea seminicola Kienholz & Cash, on seeds. Oreg.
Phyllactinea corylea (Pers.) Karst., powdery mildew. Oreg., Wash.
Septoria alnifolia Ell. & Ev., leaf spot. Oreg., Wash.
Taphrina sp., leaf curl. Calif., Oreg.
T. amentorum (Sade.) Rostr., hypertrophy of catkins. Alaska and Northwestern States.
T. macrophylla Ray, leaf curl. Calif.
T. occidentalis Ray, hypertrophy of catkins. Calif., Idaho, Oreg.
T. robinsoniana Gies., hypertrophy of catkins. Calif.

ALNUS RUGOSA (Du Roi) Spreng., SMOOTH ALDER. Growth Regions 20,22,23, 24,25,26,27,28,29.

Erysiphe aggregata (Pk.) Farl., powdery mildew. Widespread.
Glocosporium alni Ell. & Ev., leaf spot. W. Va.
G. alnicola Dearn. & House, leaf spot. N.Y.
Gnomoniella tubiformis (Tode) Sacc. Pa., W. Va.
Mycosphaerella maculiformis (Pers.) Johan. & Magn. (Phyllosticta maculiformis Sacc.), on fallen leaves. N.Y.
Phyllactinia corylea (Pers.) Karst., powdery mildew. General.
Taphrina robinsoniana Gies., hypertrophy of catkins. Southern States.
T. rugosa Ray, hypertrophy of young catkins. Ga.

ALNUS SINUATA (Regel) Rydb., SITKA ALDER. Growth Regions 2,4,6,7,12.

Cercosporella alni Dearn. & Barth., leaf spot. Alaska.
Cucurbitaria conglobata (Fr.) Ces. Alaska.
Cytospora sp., on twigs. Alaska.
Didymosphaeria oregonensis Goodding, canker. Idaho, Oreg., Wash.

ALNUS SINUATA -- Continued.

Gnomoniella tubiformis (Tode) Sacc., leaf spot. Alaska.
Microsphaera alni (DC.) Wint., powdery mildew. Alaska.
Nectria cinnabarina (Tode) Fr., die-back, twig canker. Alaska.
Phyllachora sp., leaf spot. Wash.
Septoria alnifolia Ell. & Ev., leaf spot. Alaska.
Taphrina [? occidentalis Ray], hypertrophy of catkins. Idaho.

ALNUS TENUIFOLIA Nutt., MOUNTAIN ALDER. Growth Regions 4,7,11,12,13,14.

Cylindrosporium sp., leaf spot. Mont.
Cytospora umbrina (Bon.) Sacc., on twigs. Mont.
Gnomoniella tubiformis (Tode) Sacc., leaf spot. Colo., Oreg.
Phyllactinia corylea (Pers.) Karst., powdery mildew. Widespread.
Taphrina occidentalis Ray, hypertrophy of catkins. Calif., Idaho, Oreg.
T. robinsoniana Gies., hypertrophy of young catkins. Idaho, Mont.

AMELANCHIER

AMELANCHIER spp.

Apiosporina collinsii (Schw.) Hoehn., black mildew, witches'-broom. Widespread.
Daedalea unicolor (Bull.) Fr., wood rot, butt rot. Cosmopolitan.
Erwinia amylovora (Burr.) Bergey, fire blight. Widespread.
Erysiphe polygoni DC., powdery mildew. Occasional.
Fabraea maculata (Lév.) Atk. (Entomosporium maculatum Lév.), leaf blight. Widespread.
Gymnosporangium biseptatum Ellis, rust. Aecia on A. canadensis (L.) Medic. & A. intermedia Spach. in Northeastern and Middle Atlantic States; telia on Chamaecyparis thyoides (L.) B.S.P.
G. clavariaeforme (Jacq.) DC., rust. Aecia on leaves, fruits & stems of A. alnifolia Nutt., A. florida Lindl., A. polycarpa Greene, & A. pumila Nutt., in Western States; A. canadensis, A. intermedia, & A. oblongifolia (T. & G.) Roem., in Central & Eastern States. Telia on Juniperus communis L. & J. sibirica Burgsd.
G. clavipes Cke. & Pk., rust. Aecia on fruits & stems of A. alnifolia in Mont. & Wyo.; A. canadensis, A. humilis Wiegand, A. intermedia, A. oblongifolia, & A. sanguinea (Pursh) DC., in Central & Eastern States.
G. corniculans Kern, rust. Aecia on leaves of A. canadensis, A. intermedia, A. oblongifolia, and A. sanguinea in Central & Eastern States. Telia on Juniperus spp.
G. harknessianum (Ell. & Ev.) Kern, rust. Aecia on fruits of A. alnifolia in Calif. & Oreg. Telia on Juniperus occidentalis Hook.

AMELANCHIER spp. -- Continued.

G. inconspicuum Kern, rust. Aecia on fruits of A. alnifolia, A. bakeri Greene, A. prunifolia Greene, & A. utahensis Koehne, in Ariz., Colo., N. Mex., & Utah. Telia on Juniperus utahensis (Engelm.) Lemm.
G. juvenescens Kern, rust. Aecia on leaves of A. alnifolia, A. bakeri, A. florida, A. mormonica Schneid., A. polycarpa, & A. pumila, in Western States; A. canadensis & A. humilis in Wis. Telia on Juniperus spp.
G. kernianum Bethel, rust. Aecia on leaves of A. alnifolia in Ariz., Colo., & Oreg. Telia on Juniperus spp.
G. libocedri (P. Henn.) Kern, rust. Aecia on leaves & fruits of A. alnifolia & A. florida in Calif. & Oreg. Telia on Libocedrus decurrens Torr.
G. nelsoni Arth., rust. Aecia on leaves & fruits of A. alnifolia, A. bakeri, A. florida, A. polycarpa, & A. pumila. Telia on Juniperus spp.
G. nidus-avis Thaxt., rust. Aecia on leaves, fruits & stems of A. canadensis, A. intermedia, A. laevis, & A. oblongifolia, in Central & Eastern States.
Nectria cinnabarina (Tode) Fr., die-back, canker. Occasional.
Pezicula pruinosa (Pk.) Farl. (Sphaeronema pruinosum Pk.), on branches. Widespread.
Phyllactinia corylea (Pers.) Karst., powdery mildew. Oreg., Wash.
Podosphaera oxyacanthae (DC.) D By., powdery mildew. Occasional.
Sclerotinia amelanchieris Reade, fruit rot. N.Y.
S. fructicola (Wint.) Rehm, brown rot. Mich., Ohio.
S. gregaria Dana, leaf & fruit blight. Wash.
(Sphaeronema pruinosum Pk): Pezicula pruinosa.

AMELANCHIER ALNIFOLIA Nutt., WESTERN SERVICEBERRY, SASKATOON. Growth Regions 4,10,11,12,13,14,15,18,19,21,23,24,26.

Apiosporina collinsii (Schw.) Hoehn., witches'-broom. Widespread.
Coccomyces turidus (Fr.) De Not. (Lophodermium turidum Lamb.), leaf spot. Mo., Mont.
Cylindrosporium aroniae Sacc., on leaves. Mont.
Diplodia amelanchieris Sacc., on branches. Colo.
Erwinia amylovora (Burr.) Bergey, fire blight. Mont.
Erysiphe polygoni DC., powdery mildew. Idaho, Mont.
Fabraea maculata (Lév.) Atk., leaf blight. Widespread.
Fusicladium sp., witches'-broom. Wash.
Gloeosporium perennans Zeller & Childs, canker. Oreg.
Gymnosporangium spp. See Amelanchier spp.
Lophodermium hysterioides (Pers.) Sacc., on leaves & petioles. Wash.
Phyllosticta innumerabilis Pk., leaf spot. Iowa, Nebr., N. Dak.
P. paupercula Pk., leaf spot. Kans., Mont.
Sclerotinia gregaria Dana, leaf & fruit blight. Colo.
Taphrina amelanchieri Mix, witches'-broom. Calif.

AMELANCHIER CANADENSIS (L.) Medic., DOWNY SERVICEBERRY. Growth Regions 20,21,22,23,24,25,26,27,28,29,30.

Apiosporina collinsii (Schw.) Hoehn, black mildew, witches'-broom. General.
Diaporthe tuberculosa (Ell.) Sacc., on twigs. Mich., N.J., N.Y.
Erwinia amylovora (Burr.) Bergey, fire blight. N.J.
Fabraea maculata (Lev.) Atk., leaf blight. Ga., Ill., Ind.
Gymnosporangium spp. See Amelanchier spp.
Mycosphaerella maculiformis (Pers.) Johan. & Magn., on fallen leaves. N.Y.
Nummularia discreta (Schw.) Tul., blister canker. Iowa, Kans., Mass., Ohio.
Phyllosticta virginiana (Ell. & Halst.) Seaver, leaf spot. N.Y., Pa., Wis.
Sphaeropsis amelanchieris Dearn., on branches. N.Y.

AMELANCHIER CUSICKII Fern., CUSICK SERVICEBERRY. Growth Regions 6,7,8,12.

Fusicladium sp., witches'-broom. Wash.
Sclerotinia gregaria Dana, fruit & leaf blight. Wash.

AMELANCHIER FLORIDA Lindl., WESTERN SERVICEBERRY. Growth Regions 1,2,4,7.

Apiosporina collinsii (Schw.) Hoehn., black mildew. Mont., Wash.
Fabraea maculata (Lév.) Atk., leaf blight. Oreg.
Gymnosporangium spp. See Amelanchier spp.

AMELANCHIER POLYCARPA Greene, CLUSTER SERVICEBERRY. Growth Regions 11,13,14.

Apiosporina collinsii (Schw.) Hoehn., witches'-broom. N. Mex.
Gymnosporangium spp. See Amelanchier spp.

AMORPHA

AMORPHA spp. (A. CANESCENS Pursh, LEADPLANT; A. FRUTICOSA L., INDIGO BUSH; AND OTHERS, in Middle Western, Southern, Plains and Rocky Mountain States. Sometimes cultivated).

Cucurbitaria amorphae (Wallr.) Fckl. (? Camarosporium amorphae Sacc.), on branches. Kansas.
Cylindrosporium passaloroides (Wint.) Gilman & Archer, leaf spot. Widespread.
Cytospora amorphae Ell. & Barth., on twigs. Kans., S. Dak.
Diaporthe amorphae Ell. & Ev., on branches. Kans., N. Dak.
Erysiphe polygoni DC., powdery mildew. Wyo.
Physalospora obtusa (Schw.) Cke., Diplodia amorphae (Wallr.) Sacc., on twigs. Kans., Nebr., N.Y.
Uropyxis amorphae (Curt.) Schroet., rust. General. Autoecious.

AMPELOPSIS*

AMPELOPSIS spp.

Cladosporium ? herbarum Lk., die-back. N.J.
(Glococsporium ampelopsidis Ell. & Ev.): Phleospora ampelopsidis.
Guignardia bidwellii (Ell.) Viala & Ravaz (Phyllosticta ampelopsidis, P. labrusceae, and P. viticola), leaf spot. Widespread.
Linospora psederae Dearn., leaf spot. W. Va.
Nectria cinnabarina (Todc) Fr., die-back. Occasional.
Phleospora ampelopsidis (Ell. & Ev.) Bub., leaf spot. Wis.
Physalospora obtusa (Schw.) Cke. Ala., Md., ?Ill.
(Phyllosticta ampelopsidis Ell. & Martin): Guignardia bidwellii.
Plasmopara viticola (Berk. & Curt.) Berl. & De Toni, downy mildew. N. Y., Wis.
Rhizoctonia crocorum (Pers.) D.C. (Helicobasidium purpureum (Tul.) Pat.), root rot. Tex.
Uncinula necator (Schw.) Burr., powdery mildew. Widespread.

AMPELOPSIS ACONITIFOLIA, MONKSHOOD VINE. Cult.

Tubercularia nigricans (Bull.) Sacc. = T. vulgaris Todc (Nectria cinnabarina (Todc) Fr.), die-back. N.H., Tex.

AMPELOPSIS ARBOREA Koehne (Cissus arborea (L.) Des Moul.) PEPPER-VINE.
Growth Regions 17,20,25,27,28,29,30.

Cercospora arboriae Tharp., leaf spot. Tex.
Guignardia bidwellii (Ell.) Viala & Ravaz, leaf spot. Miss., N.J.

AMPELOPSIS CORDATA Michx. (Cissus ampelopsis Pers.), HEARTLEAF AMPELOPSIS.
Growth Regions 19,20,22,25,27,28,29,30.

Cercospora truncata Ell. & Ev., leaf spot. La.
C. vitis (Lev.) Sacc., leaf spot. Ala., La.

AMPELOPSIS QUINQUEFOLIA Michx. (including vars. ENGELMANNI Rehd., HIRSUTA Planch., and VITACEA Knerr), VIRGINIA CREEPER.
Growth Regions 11,15,16,17,18,19,20,21,22,23,24,25, 26,27,28,29,30, and cult.

Botryosphaeria quercuum (Schw.) Sacc., on bark. W. Va.
Cercospora ampelopsidis Pk., leaf spot. Widespread.
C. psedoricola Tehon, leaf spot. Ill., Tex.
Coniothyrium fuckelii (Leptosphaeria coniothyrium (Fckl.) Sacc.), stem canker. W. Va.
Corticium koleroga (Cke.) Hochn., thread blight. Fla.
Diaporthe ampelopsidis Ell. & Ev., on stems. Mass., N.J., Ohio.
Guignardia bidwellii (Ell.) Viala & Ravaz, leaf spot. General.

---

*Standardized Plant Names is followed, although the Department of Agriculture, following Rehder and Bailey, prefers Parthenocissus for the species quinquefolia, tricuspidata, and vitacea. Final disposition of this terminology will await the appearance of the new S.P.N.

AMPELOPSIS QUINQUEFOLIA -- Continued.

Pezizella lythri (Desm.) Shear & Dodge, on stems. Va.
Phleospora ampelopsidis (Ell. & Ev.) Bub., leaf spot. Ill., Iowa, Nebr., Wis.
Phymatotrichum omnivorum (Shear) Dug., root rot. Tex.
Plasmopara viticola (Berk. & Curt.) Berl. & De Toni, downy mildew. Ala., Iowa, Me., Minn., N.Y., Wis.
Plowrightia neomexicana Earle, on stems. N. Mex.
Sphaeropsis ampelopsidis Daniels (? Physalospora obtusa), on stems. Ill.
Stagonospora heterospora Sacc., on stems. N.Y.
Uncinula necator (Schw.) Burr., powdery mildew. General.

AMPELOPSIS TRICUSPIDATA Sieb. & Zucc. (including var. LOWII Rehd.), BOSTON IVY. Cult.

Cercospora ampelopsidis Pk., leaf spot. Miss.
Cladosporium sp., die-back. N.J.
Corticium solani (Prill. & Delacr.) Bourd. & Galz., stem rot. Conn.
Guignardia bidwellii (Ell.) Viala & Ravaz., leaf spot. Widespread.
Phleospora ampelopsidis (Ell. & Ev.) Bub., leaf spot. Iowa.
Sphaeropsis hedericola (Speg.) Sacc. (? Physalospora obtusa), leaf spot. N.J.

JUNE WEATHER

(From U. S. Department of Commerce, Weather Bureau, Weekly Weather and Crop Bulletin for week ending July 2).

The outstanding features of the weather for June 1940 were the abnormally heavy rains in the central and west Gulf area and the middle and upper Rio Grande Valley, and a continuation of unusually warm weather over the western part of the country. This latter feature has been remarkable, with June making the twelfth consecutive month with abnormally high temperature in nearly all sections west of the Rocky Mountains.

Figure 1 shows that the month was cooler than normal in the Northeast, the upper Lake region, and from Alabama westward to the Rio Grande Valley, although the minus departures were relatively small. In the middle and south Atlantic areas and the Ohio and upper Mississippi Valleys, temperatures averaged somewhat above normal, with the largest plus departures in northwestern Illinois and central and eastern Iowa. West of the Rocky Mountains the monthly mean temperatures were decidedly high, ranging rather generally from 4° to as many as 9° above normal, except along the Pacific coast where about-normal warmth prevailed.

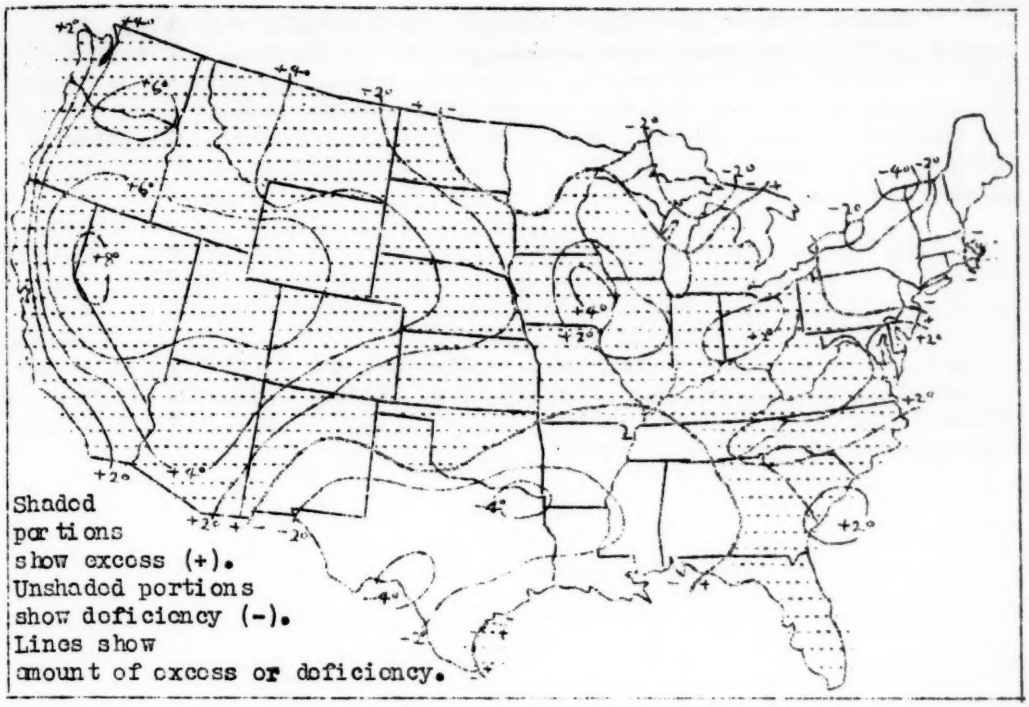

Fig. 1. Departure of mean temperature from normal for June 1940.

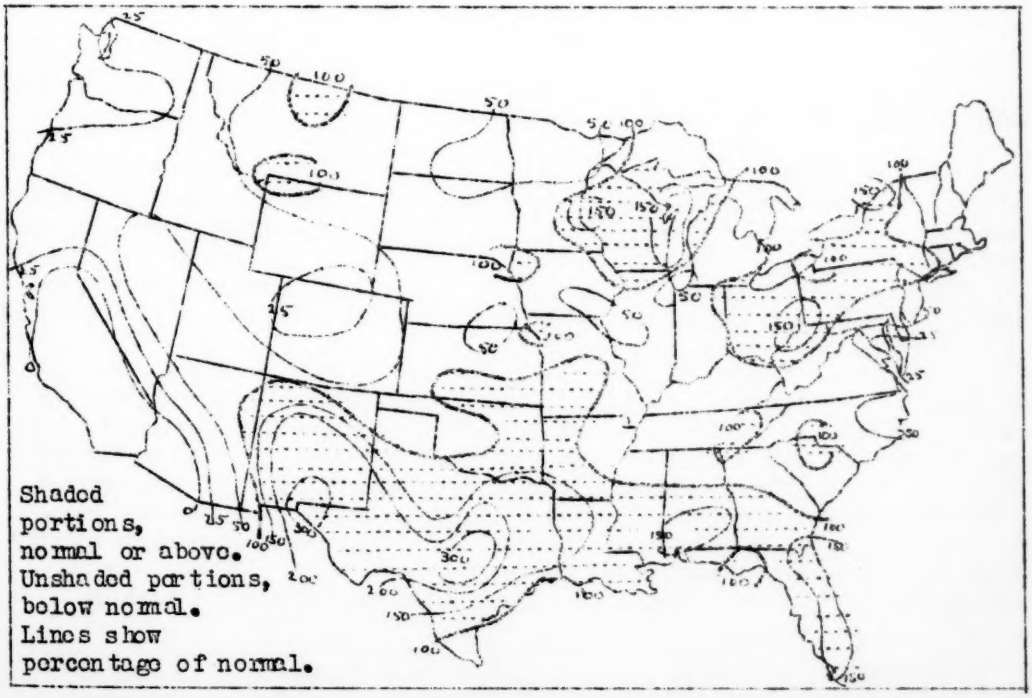

Fig. 2. Percentage of normal precipitation for June 1940.

Figure 2 shows that June rainfall was decidedly variable. The monthly totals were much above normal in most of Florida, the southern half of Alabama and Mississippi, Louisiana, Texas, and much of New Mexico; also in the upper Ohio Valley, western Lake region, and parts of the upper Mississippi Valley. The relatively heaviest falls occurred in parts of Texas and New Mexico, where some stations reported more than 3 times the monthly normal.

On the other hand, the northern Great Plains, considerable areas of the central valleys and the Middle Atlantic States were relatively dry, while no precipitation occurred in southern Arizona and central and southern California. Another dry belt extended from western Colorado and southern Wyoming northwestward across Idaho and the north Pacific area. The lower Potomac Valley was extremely dry. For example, the District of Columbia had the driest June since 1864, when the monthly total was 0.80 inch against 0.86 inch this year.